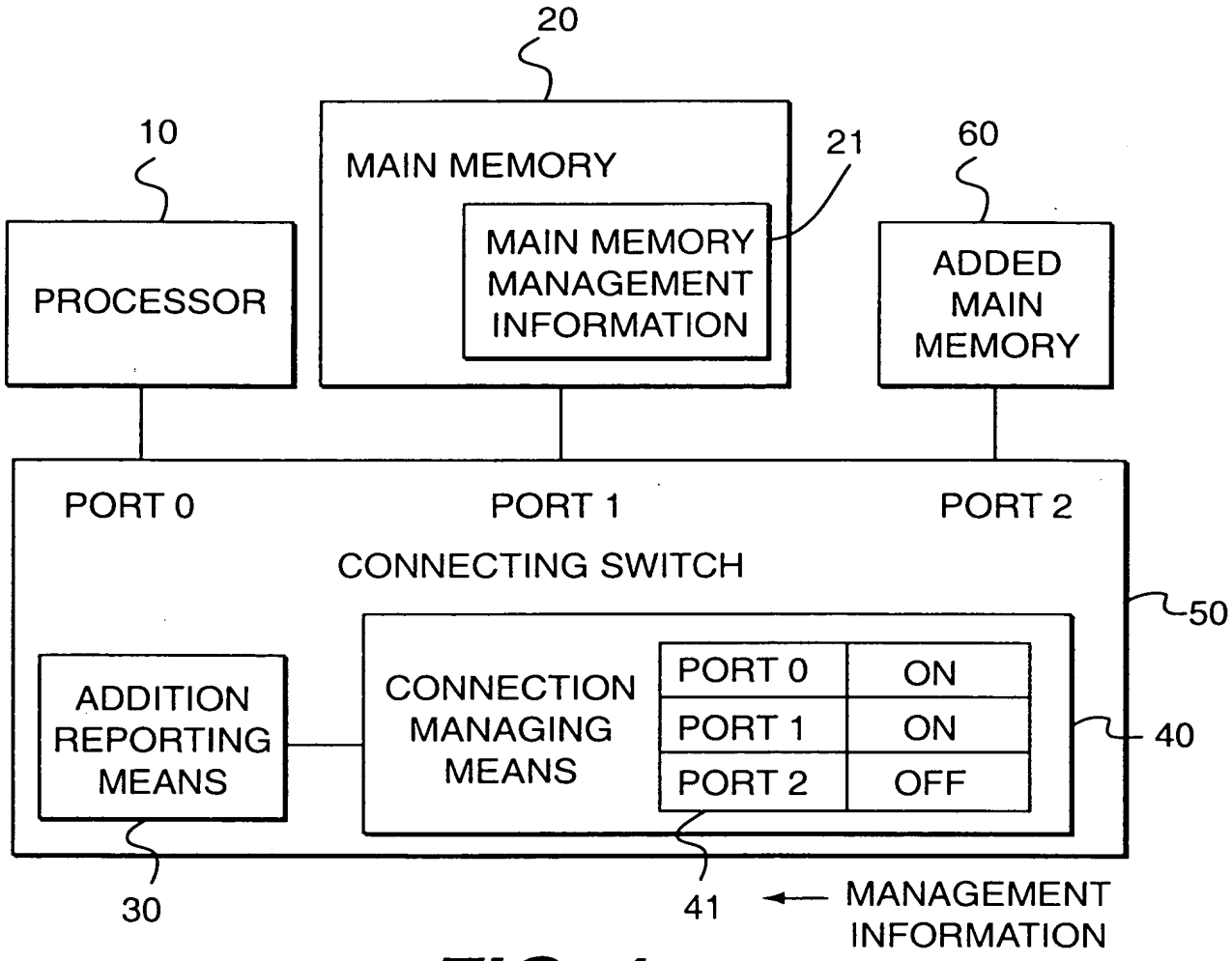
20
10
MAIN MEMORY
21
60
PROCESSOR
MAIN MEMORY MANAGEMENT INFORMATION
ADDED MAIN MEMORY
PORT 0
PORT 1
PORT 2
CONNECTING SWITCH
50
ADDITION REPORTING MEANS
CONNECTION MANAGING MEANS
PORT 0
ON
PORT 1
ON
PORT 2
OFF
40
30
41
MANAGEMENT INFORMATION

FIG. 1

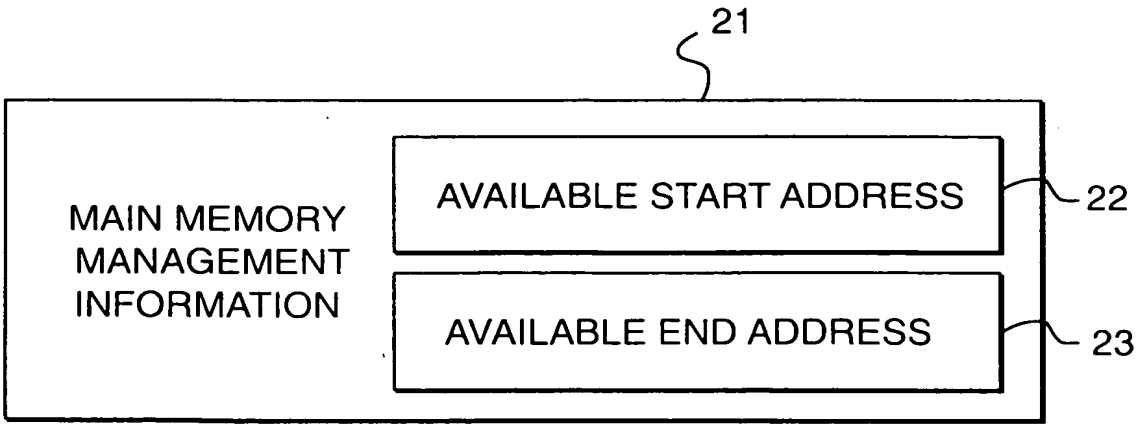
21
MAIN MEMORY MANAGEMENT INFORMATION
AVAILABLE START ADDRESS
22
AVAILABLE END ADDRESS
23

FIG. 2

ADDED: 05/22/2004

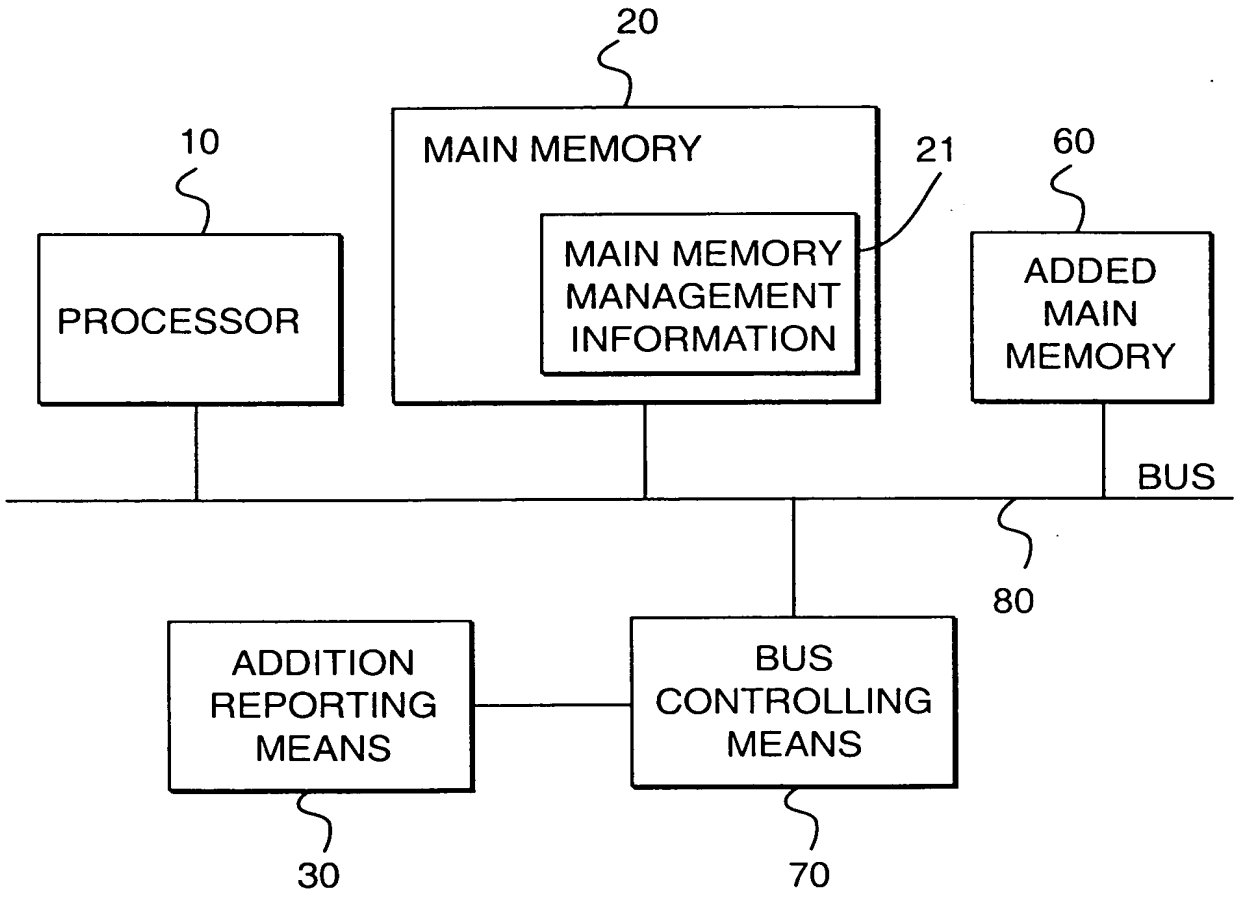

FIG. 3

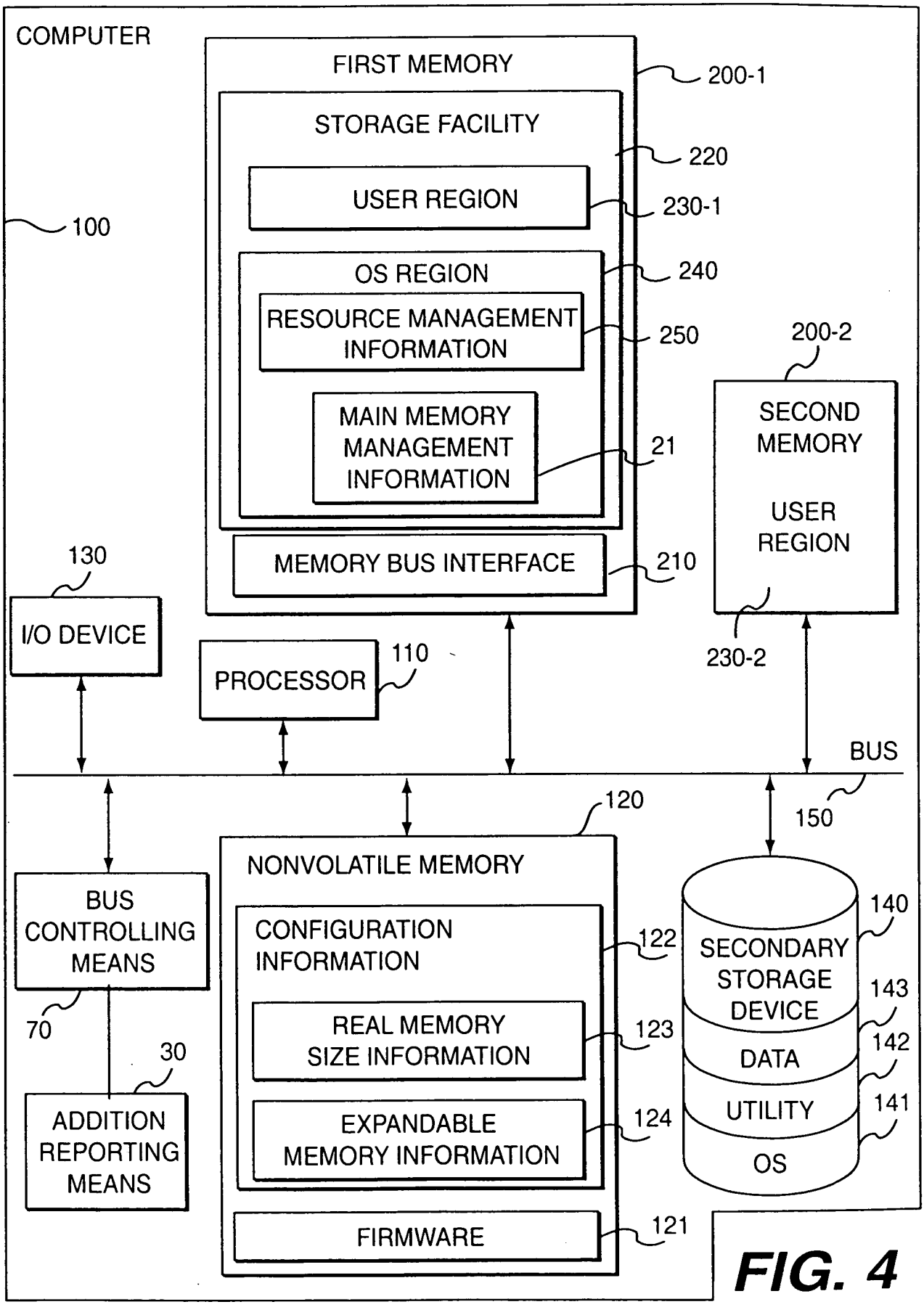
COMPUTER
FIRST MEMORY
200-1
STORAGE FACILITY
220
USER REGION
230-1
100
OS REGION
240
RESOURCE MANAGEMENT INFORMATION
250
200-2
MAIN MEMORY MANAGEMENT INFORMATION
21
SECOND MEMORY
USER REGION
MEMORY BUS INTERFACE
210
130
I/O DEVICE
PROCESSOR
110
230-2
BUS
150
120
NONVOLATILE MEMORY
BUS CONTROLLING MEANS
CONFIGURATION INFORMATION
122
140
SECONDARY STORAGE DEVICE
143
REAL MEMORY SIZE INFORMATION
123
142
DATA
70
30
EXPANDABLE MEMORY INFORMATION
124
UTILITY
141
ADDITION REPORTING MEANS
OS
FIRMWARE
121

FIG. 4

P0952-US-SSG-DP

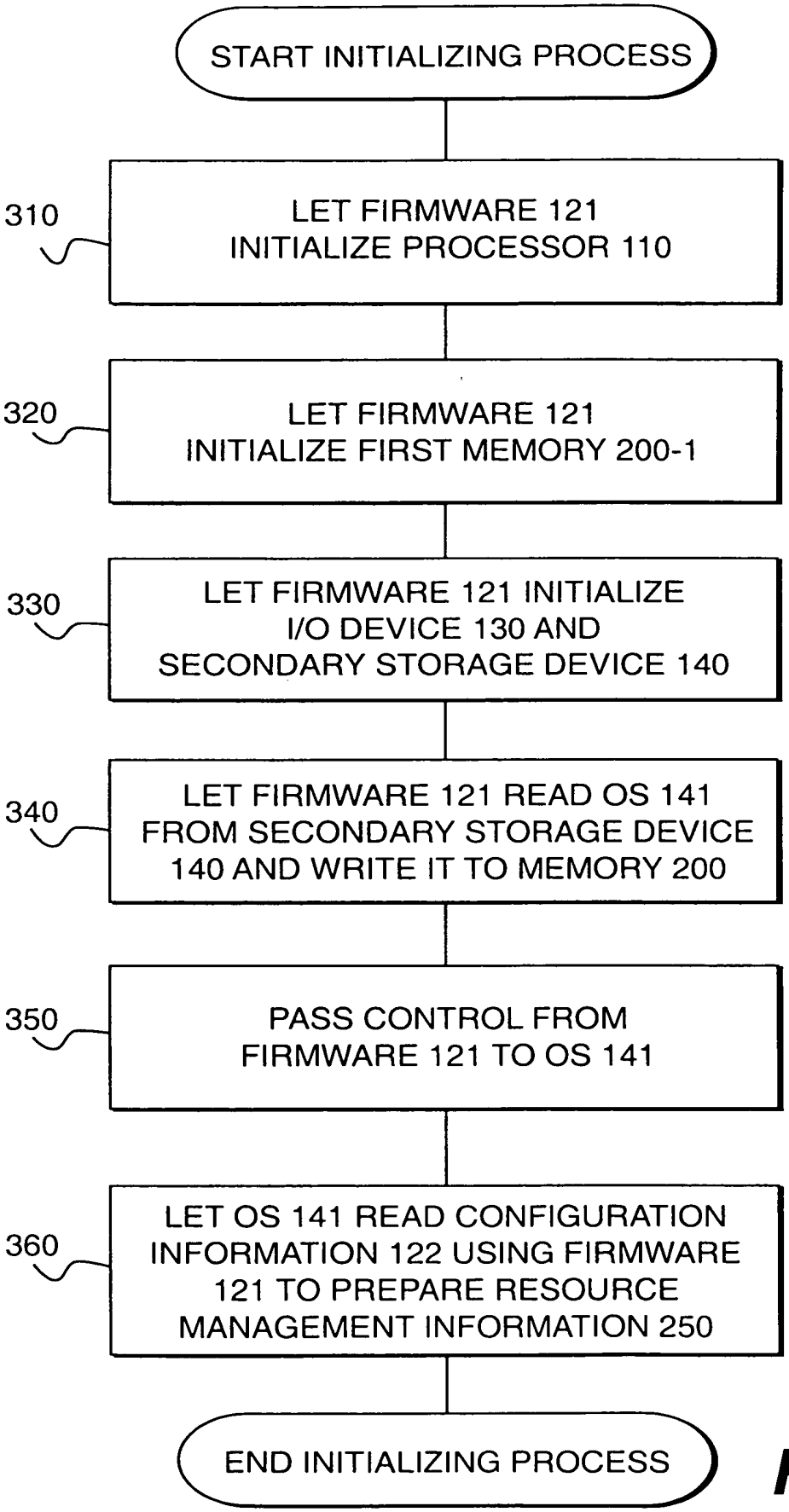

FIG. 5

EP 0 952 524 A2

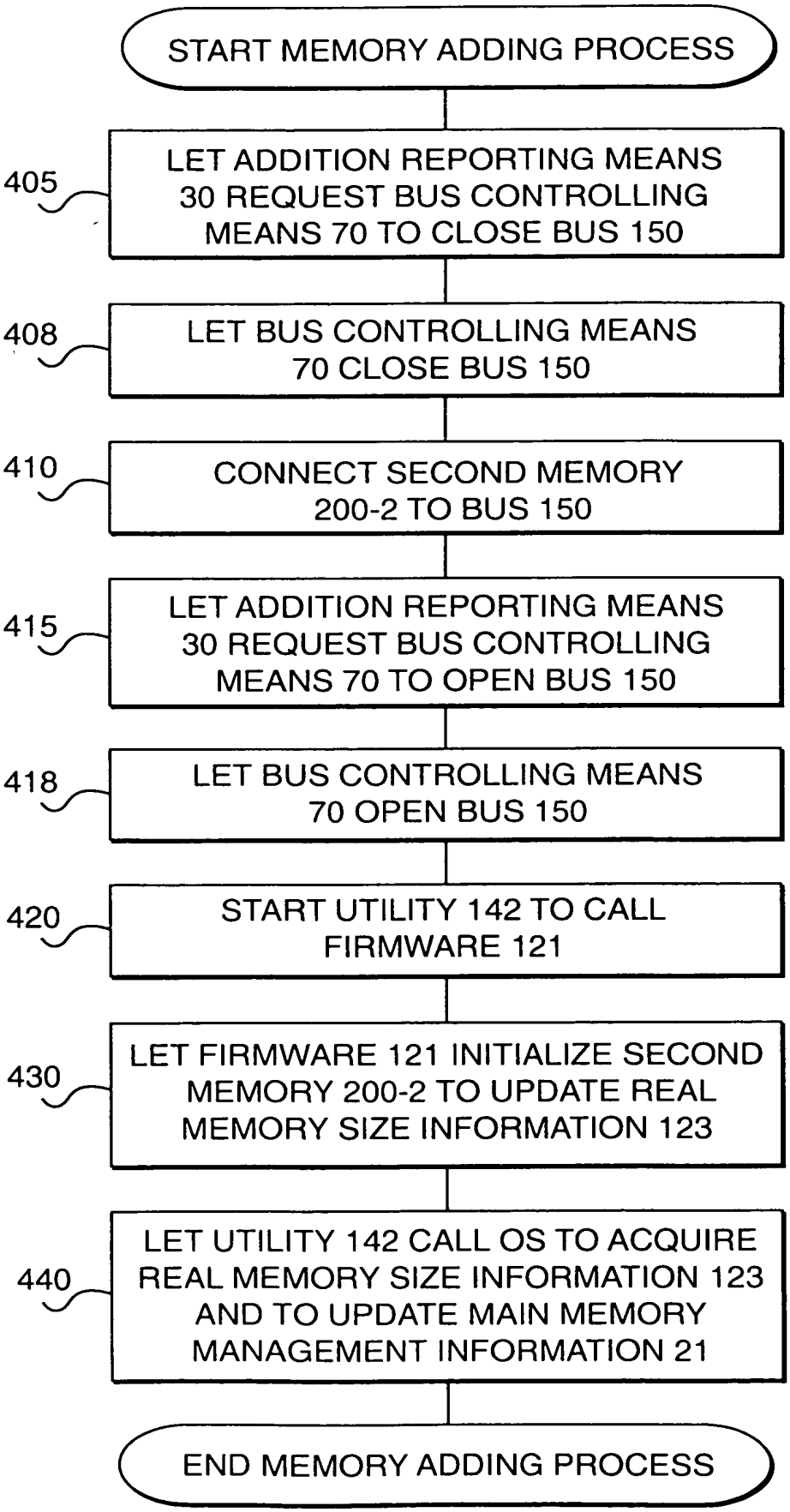

FIG. 6

205020 "E052900T

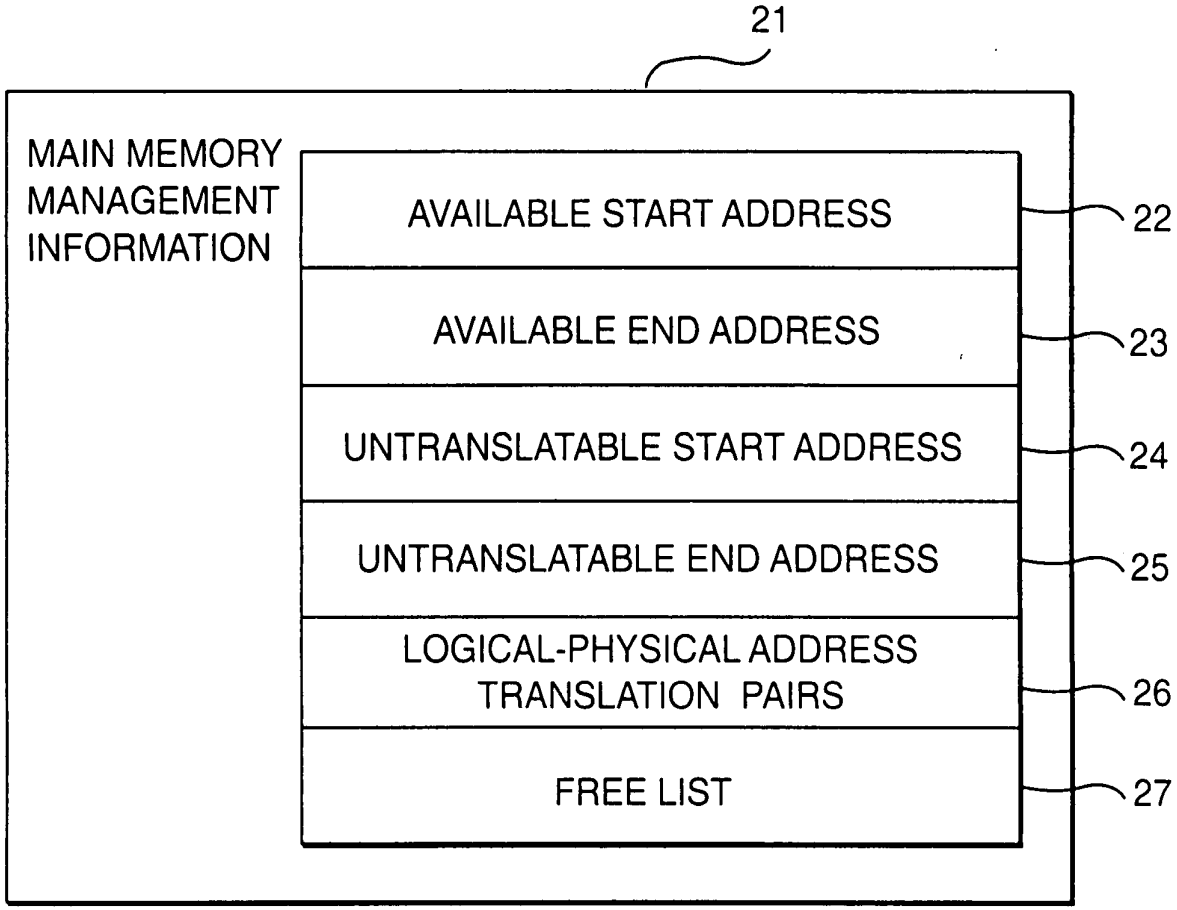

FIG. 7

2005-0525-0007

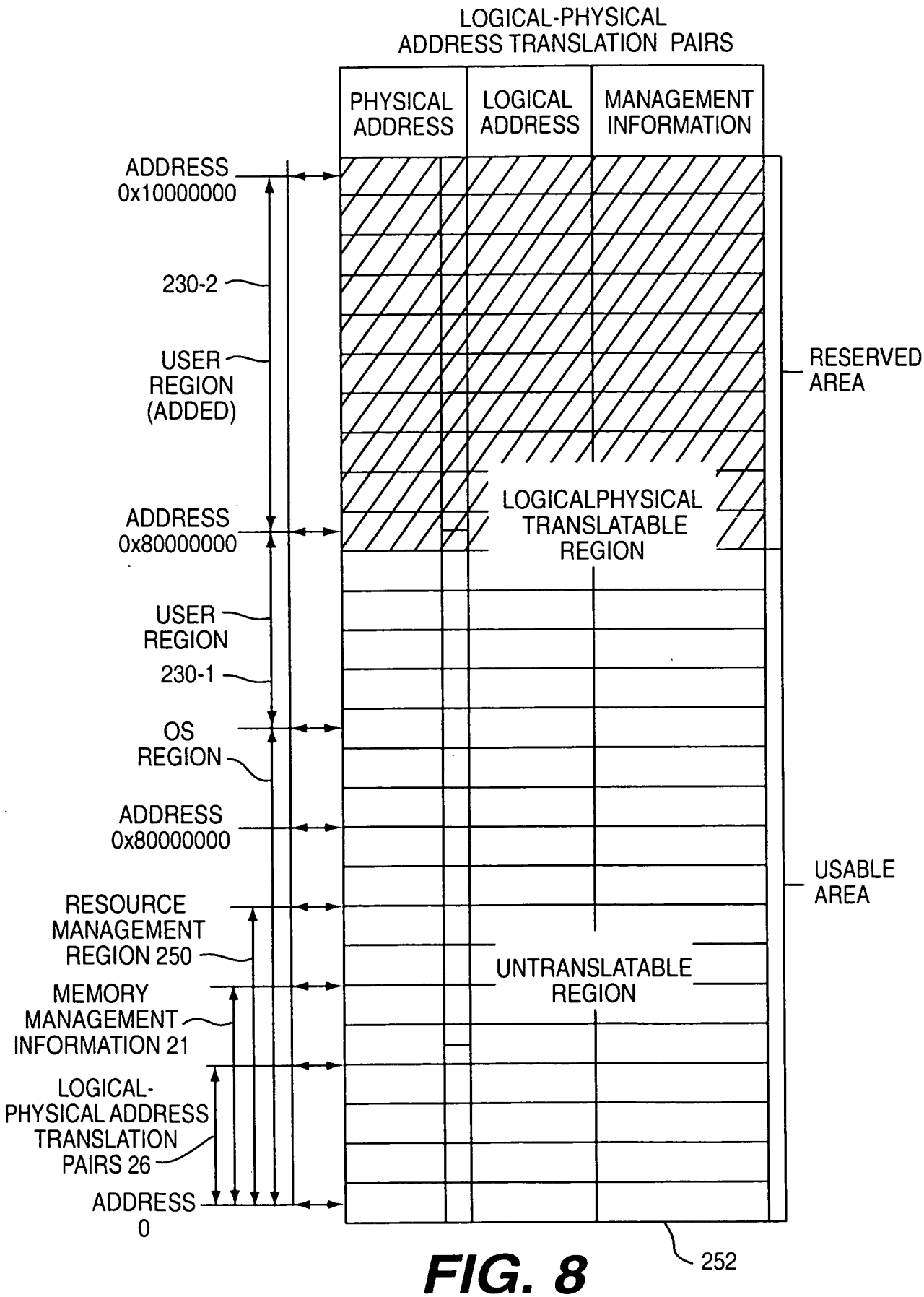

FIG. 8

EP 0 652 503 A2

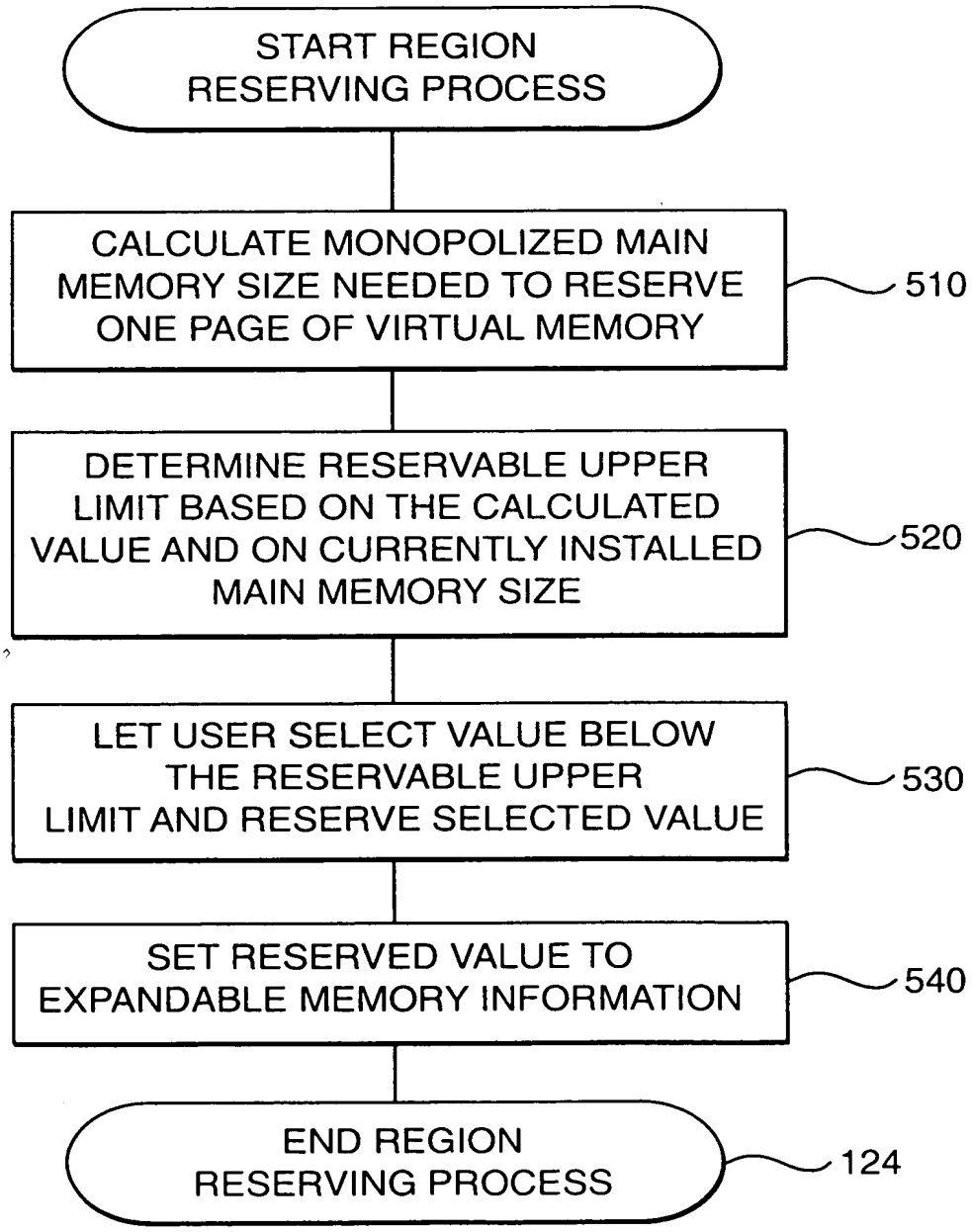

FIG. 9

20050252004

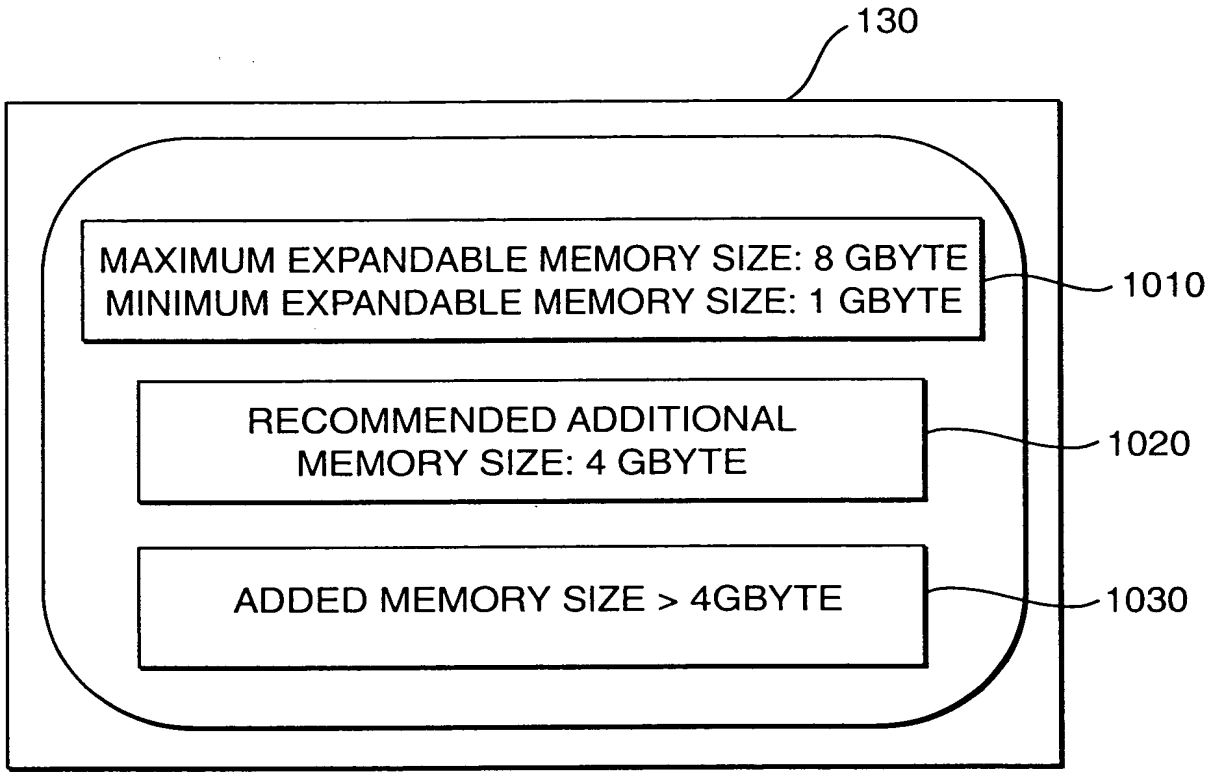

FIG. 10

2252920 052290T

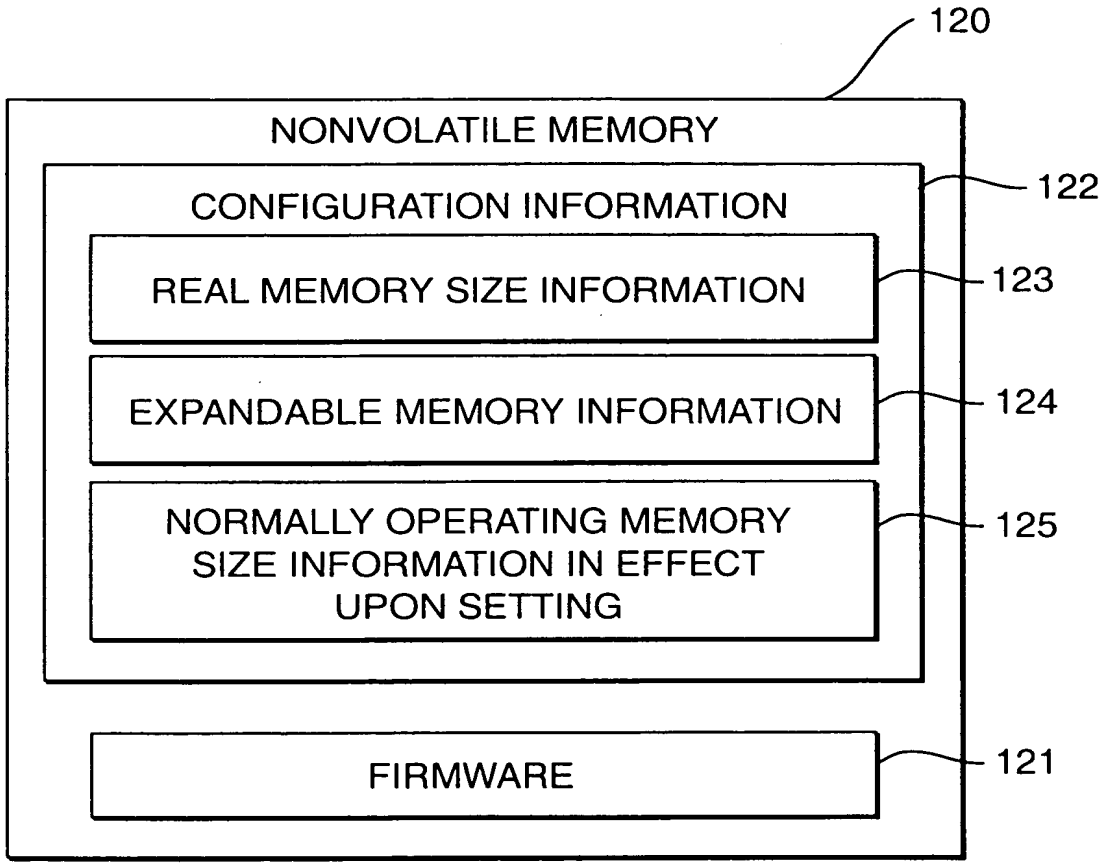

FIG. 11

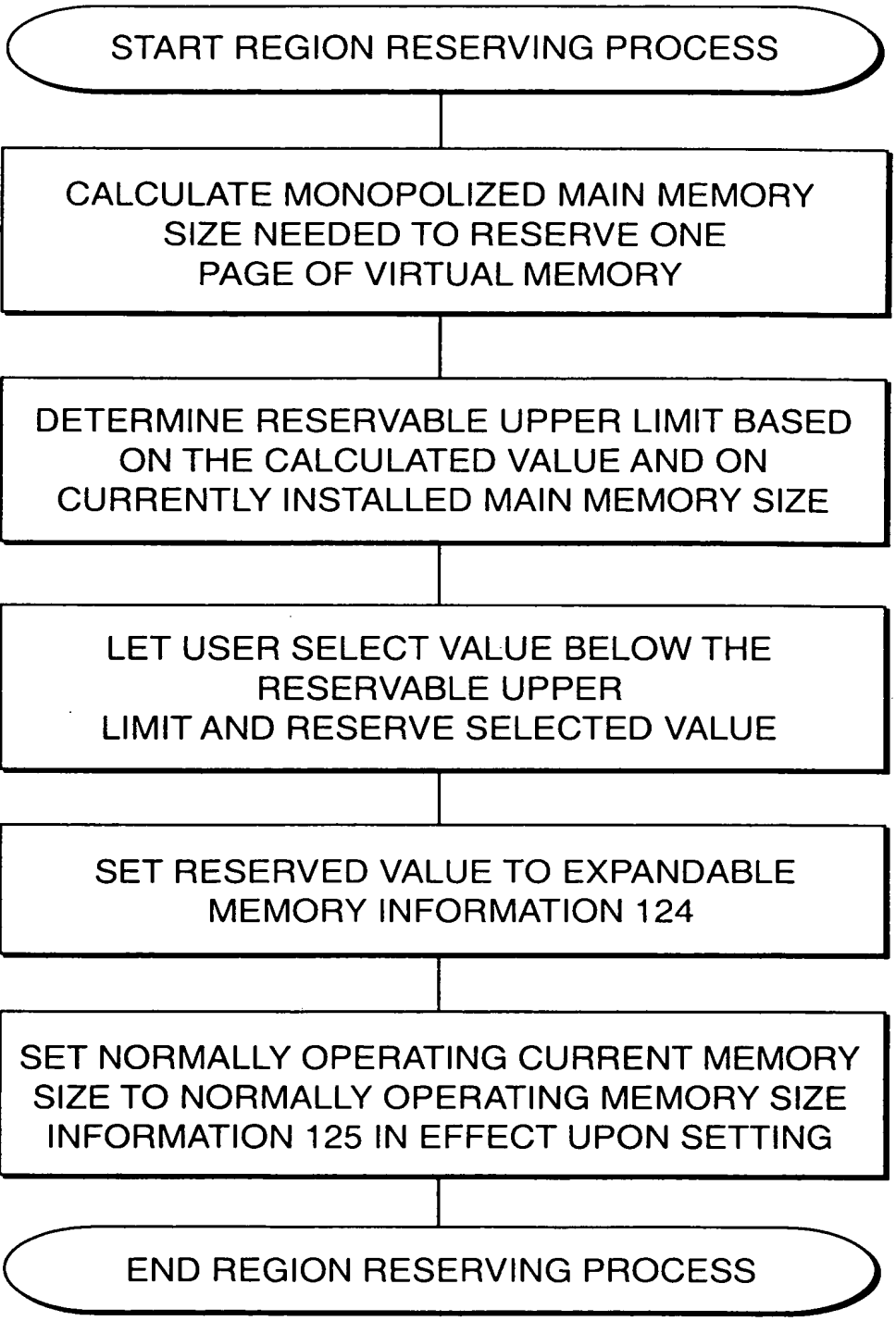
START REGION RESERVING PROCESS
510
CALCULATE MONOPOLIZED MAIN MEMORY SIZE NEEDED TO RESERVE ONE PAGE OF VIRTUAL MEMORY
520
DETERMINE RESERVABLE UPPER LIMIT BASED ON THE CALCULATED VALUE AND ON CURRENTLY INSTALLED MAIN MEMORY SIZE
530
LET USER SELECT VALUE BELOW THE RESERVABLE UPPER LIMIT AND RESERVE SELECTED VALUE
540
SET RESERVED VALUE TO EXPANDABLE MEMORY INFORMATION 124
550
SET NORMALLY OPERATING CURRENT MEMORY SIZE TO NORMALLY OPERATING MEMORY SIZE INFORMATION 125 IN EFFECT UPON SETTING
END REGION RESERVING PROCESS

FIG. 12

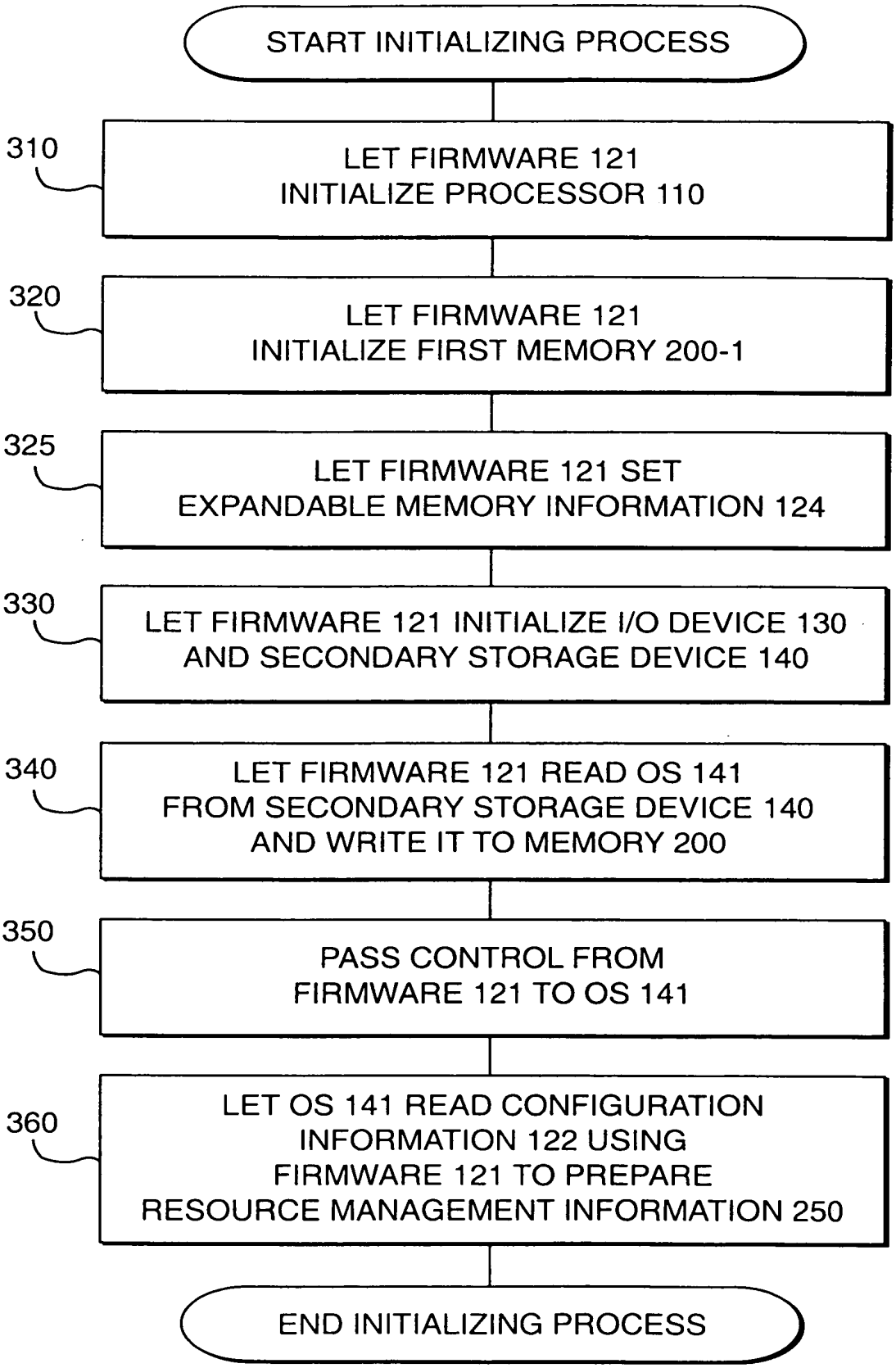
START INITIALIZING PROCESS
310
LET FIRMWARE 121 INITIALIZE PROCESSOR 110
320
LET FIRMWARE 121 INITIALIZE FIRST MEMORY 200-1
325
LET FIRMWARE 121 SET EXPANDABLE MEMORY INFORMATION 124
330
LET FIRMWARE 121 INITIALIZE I/O DEVICE 130 AND SECONDARY STORAGE DEVICE 140
340
LET FIRMWARE 121 READ OS 141 FROM SECONDARY STORAGE DEVICE 140 AND WRITE IT TO MEMORY 200
350
PASS CONTROL FROM FIRMWARE 121 TO OS 141
360
LET OS 141 READ CONFIGURATION INFORMATION 122 USING FIRMWARE 121 TO PREPARE RESOURCE MANAGEMENT INFORMATION 250
END INITIALIZING PROCESS

FIG. 13

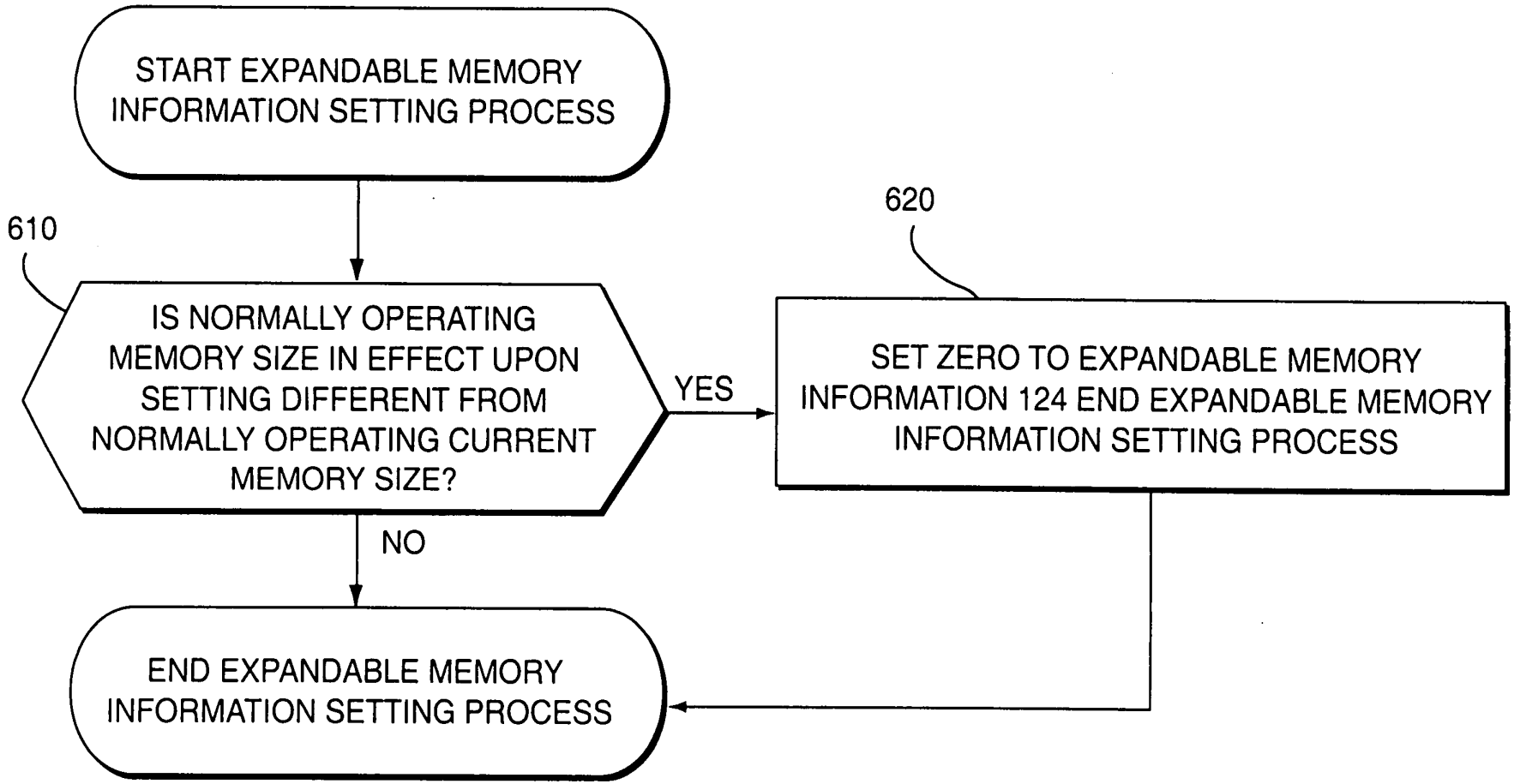
START EXPANDABLE MEMORY INFORMATION SETTING PROCESS
610
IS NORMALLY OPERATING MEMORY SIZE IN EFFECT UPON SETTING DIFFERENT FROM NORMALLY OPERATING CURRENT MEMORY SIZE?
YES
620
SET ZERO TO EXPANDABLE MEMORY INFORMATION 124 END EXPANDABLE MEMORY INFORMATION SETTING PROCESS
NO
END EXPANDABLE MEMORY INFORMATION SETTING PROCESS

FIG. 14

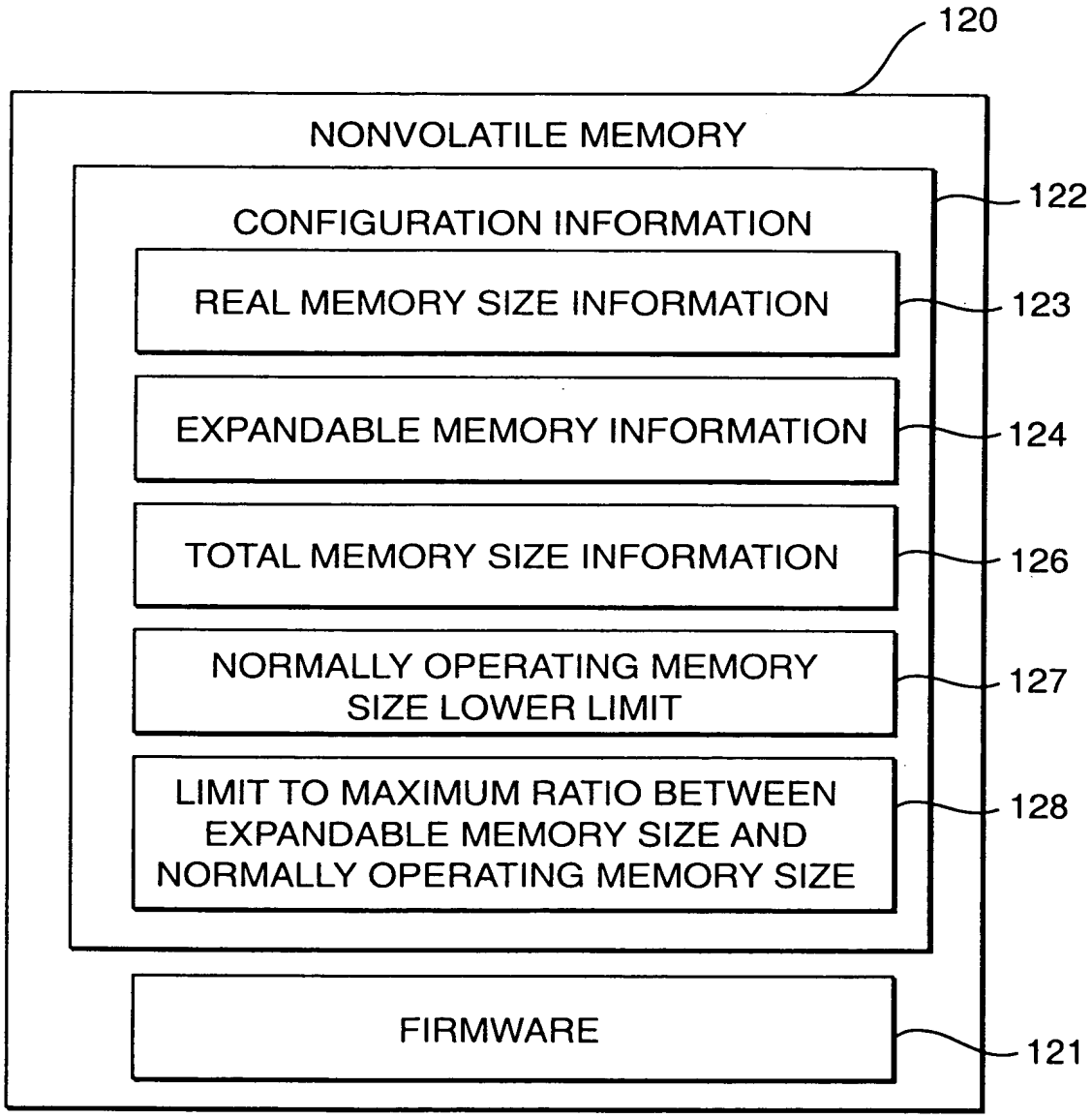
120
NONVOLATILE MEMORY
CONFIGURATION INFORMATION
122
REAL MEMORY SIZE INFORMATION
123
EXPANDABLE MEMORY INFORMATION
124
TOTAL MEMORY SIZE INFORMATION
126
NORMALLY OPERATING MEMORY SIZE LOWER LIMIT
127
LIMIT TO MAXIMUM RATIO BETWEEN EXPANDABLE MEMORY SIZE AND NORMALLY OPERATING MEMORY SIZE
128
FIRMWARE
121

FIG. 15

4005253-020502

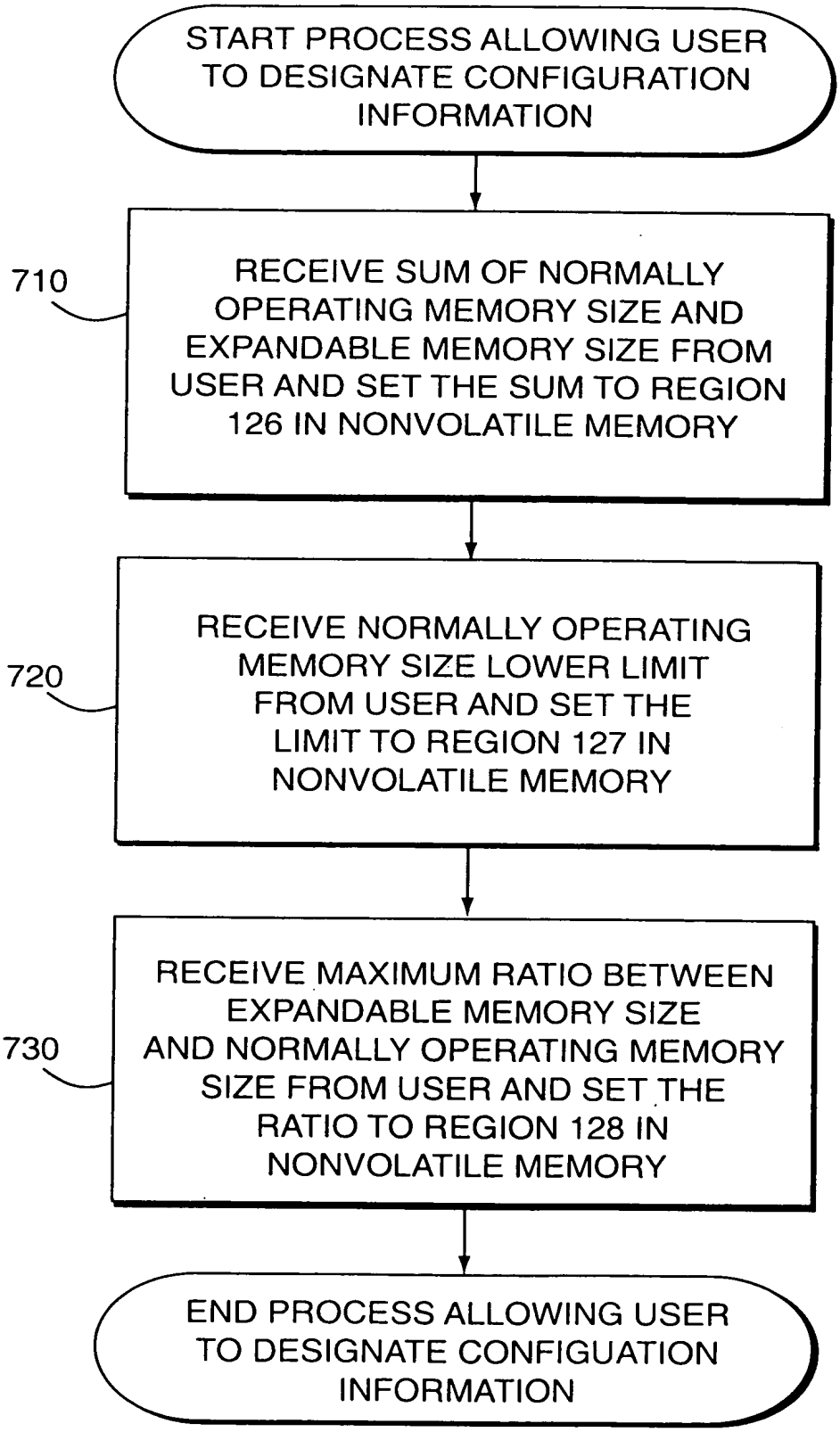

FIG. 16

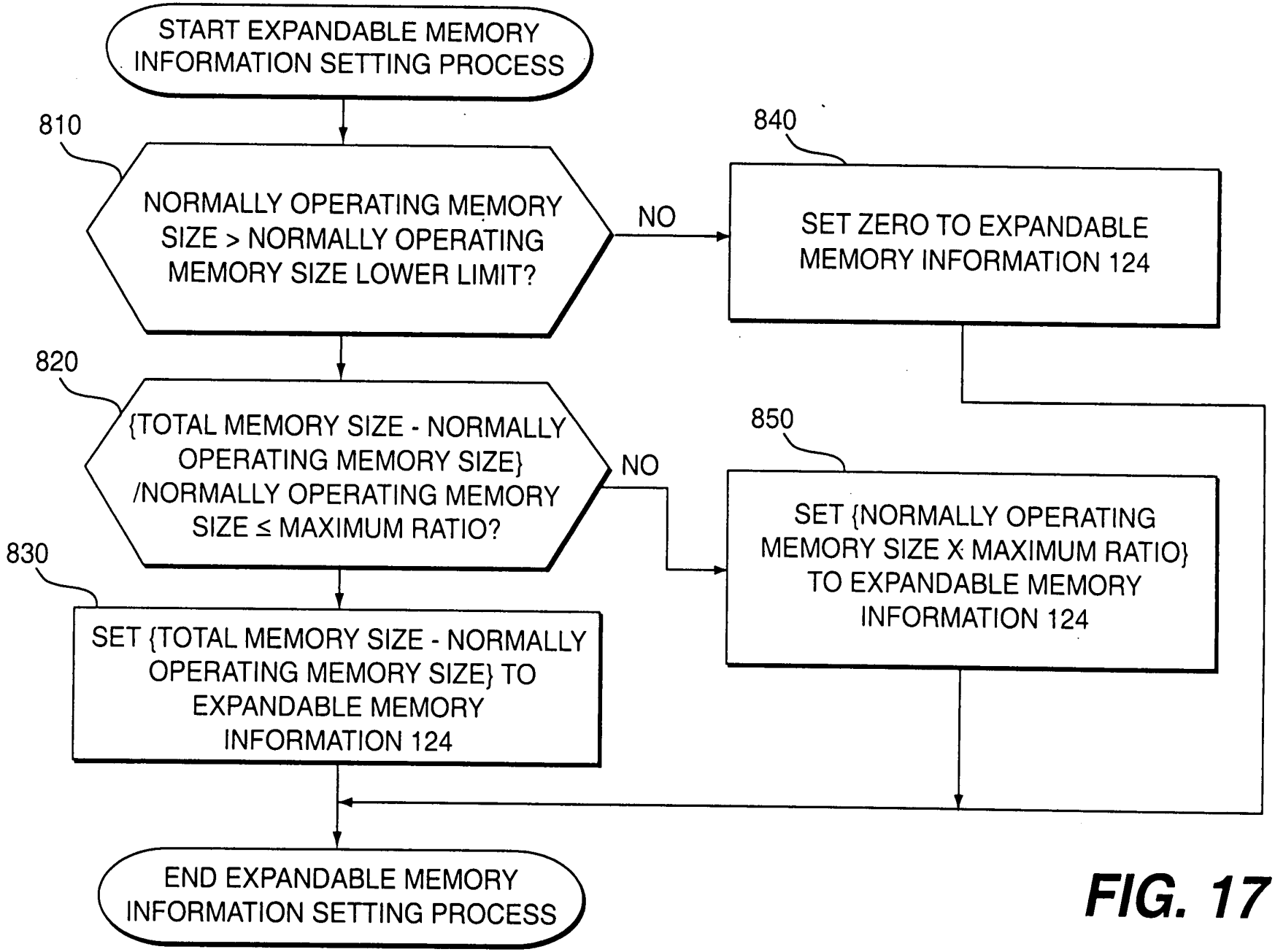
START EXPANDABLE MEMORY INFORMATION SETTING PROCESS
810
NORMALLY OPERATING MEMORY SIZE > NORMALLY OPERATING MEMORY SIZE LOWER LIMIT?
NO
840
SET ZERO TO EXPANDABLE MEMORY INFORMATION 124
820
{TOTAL MEMORY SIZE - NORMALLY OPERATING MEMORY SIZE} /NORMALLY OPERATING MEMORY SIZE ≤ MAXIMUM RATIO?
NO
850
SET {NORMALLY OPERATING MEMORY SIZE X MAXIMUM RATIO} TO EXPANDABLE MEMORY INFORMATION 124
830
SET {TOTAL MEMORY SIZE - NORMALLY OPERATING MEMORY SIZE} TO EXPANDABLE MEMORY INFORMATION 124
END EXPANDABLE MEMORY INFORMATION SETTING PROCESS

FIG. 17